# HEALTHCARE PROFESSIONAL USER GUIDE

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## COPD Assessment Test

Expert guidance on frequently asked questions

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# Introducing the COPD Assessment Test™ (CAT)

The COPD Assessment Test (CAT) is a new patient-completed instrument that has been designed to provide a simple and reliable measure of health status in COPD. It will complement existing approaches, such as $FEV_1$ measurement, in assessing COPD patients by providing a simple method of quantifying the impact of COPD on the patient's health.

The CAT has undergone a rigorous, scientific development process and the first validation studies show that it has properties very similar to much more complex health status questionnaires such as the St George's Respiratory Questionnaire (SGRQ)[1] that are used in research studies. It takes only a fraction of the time to complete, however, making it suitable for routine use. Further validation studies are underway in Europe, USA and Asia.

Throughout its development, we have understood from discussions with primary care physicians, pulmonary specialists and patient groups from around the world that the precise way the CAT will be used will vary by healthcare setting and country.

However, we felt that some initial guidance for healthcare professionals on how to use and interpret CAT scores would be helpful as soon as the CAT became publicly available. As such we have developed this, the first edition of the CAT User Guide, which is based upon our current knowledge of the CAT. In this we include a first method of grading impact of COPD by CAT scores and provide a simple outline of potential management considerations/actions. We provide these broad recommendations with the recognition that these may change as more evidence becomes available and clinicians gain more experience with the CAT.

The guide is presented in the form of frequently asked questions in order to make it as accessible and applicable to your everyday practice as possible. As we learn more, this guidance will be developed and refined further.

We look forward to hearing about your experiences using the CAT in your practice in the near future!

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On behalf of the CAT Development Steering Group

# The COPD Assessment Test™ (CAT) – the basics

## What is the CAT?

The CAT is a validated, short and simple patient-completed questionnaire which has been developed for use in routine clinical practice to measure the health status of patients with COPD. Despite the small number of component items, it covers a broad range of effects of COPD on patients' health.

## Why has the CAT been developed?

COPD represents a major burden on patients and healthcare systems. Despite the fact that it is projected to become the third leading cause of death by 2030,[2] communicating the impact of COPD can be difficult and this can contribute to under-management of COPD in a significant proportion of people who may suffer increased disability and reduced quality of life as a result.

The care of COPD patients can only be optimised if there is a reliable, standardised measure of the overall effect of disease on each patient's health.

Unfortunately, commonly used lung function measurements such as $FEV_1$ do not reflect the full impact of COPD.

As a result, there is a need for a simple-to-use tool which can measure the effect of COPD on the patient's health and enhance understanding between patients and physicians of the disease's impact in order to manage patients optimally and reduce the burden of disease as much as possible. The CAT has been developed to meet this need.

## Development of the COPD Assessment Test™ (CAT)

### How was the CAT developed?

The development of the CAT has involved well accepted methodologies used to develop psychometric tools.[1,3] The initial item generation process involved literature reviews, physician interviews and, most importantly, patient input.[3]

A structured, rigorous scientific approach was then used in the item reduction process to select the best items and generate the final 8-item questionnaire.[1]

The CAT has been initially validated in prospective studies conducted in the USA and Europe[1] but we believe that it is globally applicable. A validation study is currently ongoing in China.

The CAT has been translated and validated for use in languages other than English. Only validated translations of the CAT should be used.

For further details on validated translations please visit www.CATestonline.org

## Who developed the CAT?

The CAT was developed by a multidisciplinary group of international experts who have expertise in developing patient reported outcomes tools/questionnaires.

The group included pulmonary specialists, primary care physicians and representatives from patient bodies. Patients with COPD were integral to the development and validation of the tool. The CAT development was commissioned and funded by GlaxoSmithKline.

CAT™
COPD Assessment Test

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# Using the CAT in everyday practice: why, who and when

## Why should I use the CAT?

The CAT is a short, simple questionnaire which is quick and easy for patients to complete. It provides a framework for discussions with your COPD patients and should enable you and them to gain a common understanding and grading of the impact of the disease on their life. It should also help you to identify where COPD has the greatest effect on the patient's health and daily life. As a result you may be better informed when discussing and making management decisions with your patients and be able to ensure that his or her health status is as good as it can be.

## For which patients is the CAT suitable?

The CAT is suitable for completion by all patients diagnosed with COPD.

## Can the CAT be used in all COPD patients irrespective of disease severity?

Yes. The CAT has been developed and validated in COPD patients of all disease severities as defined by the Global Initiative for Chronic Obstructive Lung Disease (GOLD).[1,3]

## Where and how does the CAT fit into the clinical assessment of COPD?

The CAT provides a reliable measure of the impact of COPD on a patient's health status.[1] It therefore provides supplementary information to that provided by other aspects of COPD clinical assessment recommended by current management guidelines (i.e. assessment of exacerbation risk and degree of airway obstruction, assessed using spirometry).

The CAT provides a framework for discussions with your COPD patient and should enable you and them to gain a common understanding and grading of the impact of the disease on their life. It should also help you to identify where COPD affects each patient's health and daily life most. As a result you may be better informed in discussing and making management decisions with them and be able to ensure each of your COPD patient's health status is as good as it can be.

## Does the CAT replace spirometry?

No. The CAT is not a diagnostic tool. Spirometry is essential for the diagnosis of COPD. The CAT and spirometry are complementary measures which can be used together in the clinical assessment of a patient's COPD to ensure that they are being optimally managed.

## Can I use the CAT to diagnose COPD?

No. The CAT is a scientifically developed tool for measurement of health status. It is not a diagnostic instrument, unlike $FEV_1$ measurement – which is needed to confirm the diagnosis of COPD, as well as to assess the degree of airway obstruction.

## Will the CAT help me make management decisions regarding any co-morbidities which my COPD patients may also have?

No. The CAT is a disease-specific tool to measure the impact of COPD on patients. It will not provide an assessment of co-morbid conditions or provide information to help guide any management decisions for co-morbid conditions.

## How does the CAT compare with other health status measures used in COPD?

The CAT has very similar discriminative properties to the much more complex SGRQ, suggesting that it will be able to measure the impact of COPD on the health of individual patients in a similar way. However, the CAT is much simpler and quicker to complete.

# Practical use of CAT

## When do I give the CAT to my patients to complete?

Experts involved in the development of the CAT recommend that you ask a COPD patient to complete a CAT questionnaire when they arrive for a check-up appointment for their COPD or immediately before attending. Completion of the CAT takes only a couple of minutes and patients could complete it whilst waiting to see you or at home prior to consultation. The completed CAT questionnaire can then provide a framework for your consultation.

## Where can I access the CAT questionnaire?

You can download the CAT questionnaire from www.CATestonline.org

## Will patients require much instruction to complete the CAT?

The content of the CAT questionnaire has been driven by COPD patients. It comprises 8 simple questions that most patients should be able to understand and answer easily. You should not need to assist patients to complete it. In fact it is much better if they complete this independently.

## How frequently should the CAT be used in patients?

The optimal frequency for completing the CAT is still to be determined by actual use in clinical practice. Until further data is available on this, the expert development committee would recommend that patients routinely complete the CAT questionnaire every 3-6 months.[3]

## What is the scoring range of the CAT?

The CAT has a scoring range of 0-40.

## What do CAT scores and changes in CAT scores mean?

The implication of CAT scores needs to be considered in relation to an individual's disease severity. Patients with more severe COPD (as defined by GOLD) would be expected to have higher CAT scores than patients with milder disease, although many studies have shown that the relationship between GOLD stage (measured by $FEV_1$) and health status scores is generally very weak.[4] This is one of the reasons that the CAT was developed and also why the assessment of health status and GOLD stage are complementary.

Research is currently ongoing to define ranges of CAT score severity and to better understand the minimal clinically relevant change (often referred to as the Minimum Clinically Important Difference or MCID) in a CAT score from one visit to the next. However, based on the strong correlation of the CAT with the SGRQ, we currently believe that a difference or change of 2 or more units suggests a clinically significant difference or change in health status. We emphasise that this needs to be confirmed by further scientific studies, but we are confident that it is a reasonable indicative value of the MCID based upon current knowledge.

Due to the strong correlation between the CAT and the SGRQ it is possible to map CAT scores to specific SGRQ items. Four descriptive scenarios have been developed to provide you with pictures of the type of patient associated with different levels of CAT score. The content of these is based solely on the appropriate items in the SGRQ. They are for illustrative purposes only since each patient will vary in the way COPD affects him or her, but the scenarios may be useful in providing you with the broad clinical picture of the impact of COPD associated with different levels of CAT score.

In addition, for each scenario, the CAT Development Steering Group has proposed some potential management considerations:

| CAT score | Impact level | Broad clinical picture of the impact of COPD by CAT score | Possible management considerations |
|---|---|---|---|
| >30 | Very high | Their condition stops them doing everything they want to do and they never have any good days. If they can manage to take a bath or shower, it takes them a long time. They cannot go out of the house for shopping or recreation, or do their housework. Often, they cannot go far from their bed or chair. They feel as if they have become an invalid. | Patient has significant room for improvement.<br>In addition to the guidance for patients with low and medium impact CAT scores consider:<br>• Referral to specialist care (if you are a primary care physician)<br>Also consider:<br>• Additional pharmacological treatments<br>• Referral for pulmonary rehabilitation<br>• Ensuring best approaches to minimising and managing exacerbations |
| >20 | High | COPD stops them doing most things that they want to do. They are breathless walking around the home and when getting washed or dressed. They may be breathless when they talk. Their cough makes them tired and their chest symptoms disturb their sleep on most nights. They feel that exercise is not safe for them and every thing they do seems too much effort. They are afraid and panic and do not feel in control of their chest problem. | |
| 10-20 | Medium | COPD is one of the most important problems that they have. They have a few good days a week, but cough up sputum on most days and have one or two exacerbations a year. They are breathless on most days and usually wake up with chest tightness or wheeze. They get breathless on bending over and can only walk up a flight of stairs slowly. They either do their housework slowly or have to stop for rests. | Patient has room for improvement – optimise management.<br>In addition to the guidance provided for patients with low impact CAT scores consider:<br>• Reviewing maintenance therapy – is it optimal?<br>• Referral for pulmonary rehabilitation<br>• Ensuring best approaches to minimising and managing exacerbations<br>• Reviewing aggravating factors – is the patient still smoking? |
| <10 | Low | Most days are good, but COPD causes a few problems and stops people doing one or two things that they would like to do. They usually cough several days a week and get breathless when playing sports and games and when carrying heavy loads. They have to slow down or stop when walking up hills or if they hurry when walking on level ground. They get exhausted easily. | • Smoking cessation<br>• Annual influenza vaccination<br>• Reduce exposure to exacerbation risk factors<br>• Therapy as warranted by further clinical assessment. |

## What effect does an exacerbation have on CAT scores?

We already know that CAT scores in patients with moderate-severe exacerbations are approximately 5 units higher than in those who are not exacerbating.[1] Based on what we know from other studies, this is likely to be the size of change in CAT score when a patient gets an exacerbation. Research studies have shown that it may take many weeks for patients to recover fully from a single moderate-severe exacerbation and some patients may never recover fully. Therefore another potential application of the CAT may be to assess the degree of recovery following an acute exacerbation by re-assessing the CAT score 2-3 months after the event.

## Will I be able to assess response to therapy with the CAT?

We know that the CAT has good repeatability[1], which is similar to that for the $FEV_1$ and, based upon our current knowledge, we believe that the relative size of its response to therapy will also be similar to that of the $FEV_1$. For these reasons, we think that the CAT will be like the $FEV_1$ – a reliable method of assessing response to therapy in groups of patients, but less reliable for assessing whether an individual patient has had a worthwhile response to a specific therapy. That will always require a thorough individual assessment taking a number of factors into account – including change in CAT score. However, the CAT will provide a measure of the individual patient's health that will be very useful in initial assessment and for following medium to long-term trends.

It should also provide a prognostic measure of future health resource use in individual patients. Data analysis is currently ongoing to confirm this. The design of the CAT may also allow clinicians to readily identify areas of a patient's health that are more severely impaired than others, such as mood, daytime physical function or sleep.

## Can I just use a few of the questions included in the CAT?

No. The CAT should be used in its entirety. The CAT was validated as an 8-item questionnaire and the questions should not be split up or used independently of each other. This will reduce the integrity and measurement properties of the questionnaire. However, responses to the individual items can be used to provide you with an indication of the areas of the patient's health that are more affected than others. For example, one patient may have higher scores for cough and sputum, whereas another may have highest scores for the items about activity or sleep.

## Is the CAT free to use?

Yes. The CAT will be available and free to use globally (no charges will be associated with its use).

## Is the CAT available in different languages?

Yes. The CAT will be available in different languages. However, only approved translations of the CAT questionnaire should be used to ensure the validity and measurement properties of the questionnaire are maintained. For further details on validated translations please visit **www.CATestonline.org**

**References**

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## NOTES

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## Improving COPD communication, improving care

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